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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/897,365	07/02/2001	Adrianus Wilhelmus Maria Van Den Enden	NL 000385	8465

24737 7590 02/17/2004

PHILIPS INTELLECTUAL PROPERTY & STANDARDS
P.O. BOX 3001
BRIARCLIFF MANOR, NY 10510

EXAMINER

NOLAN, DANIEL A

ART UNIT	PAPER NUMBER
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2654

DATE MAILED: 02/17/2004

7

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/897,365

Applicant(s)

VAN DEN ENDEN ET AL.

Examiner

Daniel A. Nolan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 July 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 July 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The drawing is objected to under 37 CFR 1.83(a).
 - The drawing must show every feature of the invention specified in the claims.
Therefore, the relevance to the *ordering and reducing of the polynomials* must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.
 - The drawing fails to show *ordering and reducing of the polynomials* as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d).
2. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

3. The abstract of the disclosure is objected to because it contains claim terminology (i.e., the word "comprising" in the 2nd line). Correction is required.
See MPEP § 608.01(b).

4. The disclosure is objected to because of the following informalities:
- Acronyms must be defined at their initial use. - - (LSF) - - should be inserted after the 4th line (page 1).
 - The Brief Summary of the Invention is missing.
 - There is no Explanation of the Drawings.

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC
(See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (e) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) BRIEF SUMMARY OF THE INVENTION.
- (g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (h) DETAILED DESCRIPTION OF THE INVENTION.
- (i) CLAIM OR CLAIMS (commencing on a separate sheet).
- (j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Appropriate correction is required.

Response to Amendment

5. The preliminary amendment has been entered with the application, with the effect that the claims have been changed as indicated and examined on the merits.

Claim Objections

6. Claims 3 and 4 are objected to because of the following informalities:

- All variables ($v_0, m_q, z, \omega_3, \omega_{2^*m}...$ etc.) must be defined in the claims.
- The Examiner is proceeding with the understanding that the meaning of the terms in the claims can be gleaned from the specification.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

7. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. Claims 1-4 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims are not in the useful technical arts, consisting of types of mathematical subject matter not entitled to patent protection standing alone.

9. Claims 5-6 are rejected under 35 U.S.C. 101 because the disclosed invention is inoperative and therefore lacks utility. The claims lack embodiment as *the "encoder"* is not disclosed as being manifest in either hardware or software.

Claim Rejections - 35 USC § 112

10. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

11. Claims 5-6 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification makes no mention of *"an encoder"* or encoding *per se*.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Taori et al ("Speech Compression Using Pitch Synchronous Interpolation", International Conference on Acoustics, Speech, and Signal Processing, May 1995)

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time-domain algorithm for compressing speech signals using a time weighted average, periodically extendable pitch cycle is extracted. Computational complexity of the resulting decoder is surprisingly modest with quality comparable to G.721.

- Nakhai et al ("A Novel Algorithm To Estimate The Line Spectral Frequencies From LPC Coefficients", IEEE International Symposium on Circuits and Systems, May 1998) LSF's are estimated by locating the zeros of two polynomials derived from LPC inverse filter polynomial to convert the higher order LPC coefficients to associated LSF's. The algorithm can be implemented using fixed-point DSP's.
- Beex et al ("Direct Line Spectral Frequency Adaptation In Second Order Cascade Sections", Conference Record of the Thirty-Third Asilomar Conference on Signals, Systems, and Computers, October 1999) direct estimation of LSF for speech coding, obtained directly from the coefficients of each section of a cascaded structure.
- Papamichalis et al (U.S. Patent 4,625,286 A) time encoding of LPC roots.
- Ahlberg (U.S. Patent 5,233,659 A) quantizing line spectral frequencies when calculating filter parameters in a speech coder.
- Gardner (U.S. Patent 5,704,001 A) from generated set of quotient coefficients and set of speech auto correlation coefficients, computes LSP sensitivity coefficients according to weighted cross correlation computation of line spectral pair frequencies.
- Cong et al (U.S. Patents 6,044,343 A & 6,070,136 A) adaptive speech recognition with selective input data to a speech classifier & matrix quantization with vector quantization error compensation for robust speech recognition.

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- Grabb et al (U.S. Patent 6,081,776 A) speech coding system and method including adaptive finite impulse response filter.
- Asghar et al (U.S. Patent 6,347,297 B1) Speech recognition system combines classified quantization observation sequence to generate classification data.
- Soheili (U.S. Patent 6,487,527 B1) deriving LSP polynomials from LPC co-efficients using LSP values and selecting LSP values with root approximate to polynomials.
- Arslan et al (U.S. Patent 6,263,307 B1) Sampled acoustic signal filtering estimating power spectrum from line signal frequency values of transformed frames.
- Blackmer et al (U.S. PATENT 4,680,796 A) Sound encoding system for audio information - generates two encoded signals containing audio data representative of virtual images of sources, subsequently decoded.
- Davis et al (U.S. PATENT 5,291,557 A) Adaptive rematrixing of matrixed audio signals selects matrix output signals or their sum or difference signals w.r.t. number of artifacts in signal, and applies them to decoder, with quiet components not corrupted by loud ones.

13. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Daniel A. Nolan at telephone (703)305-1368 whose normal business hours are 7AM-5PM, Mon-Tue & Thu-Fri.

If attempts to contact the examiner by telephone are unsuccessful, supervisor Richemond Dorvil can be reached at (703)305-9645.

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The fax phone number for Technology Center 2600 is (703)872-9314. Label informal and draft communications as "DRAFT" or "PROPOSED", & designate formal communications as "EXPEDITED PROCEDURE". Formal response to this action may be faxed according to the above instructions,

or mailed to:

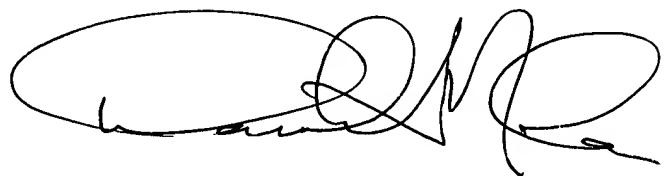
P.O. Box 1450
Alexandria, VA 22313-1450

or hand-deliver to: Crystal Park 2,
2121 Crystal Drive, Arlington, VA,
Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to Technology Center 2600 Customer Service Office at telephone number (703)306-03776-0377.

Daniel A. Nolan
Examiner
Art Unit 265454

DAN/d
January 13, 2004

A handwritten signature in black ink, appearing to read 'Daniel A. Nolan', with a large, stylized initial 'D' and 'N'.

**DANIEL NOLAN
PATENT EXAMINER**